COMPETITIVENESS ANALYSIS OF ROBUSTA COFFEE IN EAST JAVA, INDONESIA

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ABSTRACT

Coffee is one of the strategic and superior commodities of plantation crops in East Java and it has made a real contribution to increase economic growth. The purpose of this research is to analyse the comparative and competitive advantage of Robusta coffee in East Java using the method of qualitative and quantitative analysis. The location of the research is chosen purposively, which is Jember, Lumajang and Malang Regency. The technique to determine the number of respondent is using Quota Sampling, where the number of respondents of each regency is as many as 100 respondents, so the total number is 300 respondents. The analysis technique is using Policy Analysis Matrix (PAM) method as the indicator of comparative advantage and Private Cost Ratio (PCR) method as the indicator of competitive advantage. The research result proves that Robusta coffee in East Java is capable to compete, which is indicated by a comparative advantage of 0.3780 and competitive advantage of 0.4421.

Keywords: Policy Analysis Matrix (PAM), Comparative Advantage, Competitive Advantage, Robusta Coffee.

INTRODUCTION

In the Regional Medium-Term Development Plans 2015-2019, The Provincial Government of East Java will improve an inclusive, independent and competitive economic development based on agribusiness/agro-industry and industrialization. Currently, the problems faced by Robusta coffee farmers and the government are very complex. There are 6 (six) strategic issue in plantation development, including Robusta coffee, namely: low productivity and quality; limitation of fertile land for plantation cultivation; low soil organic material; limitation of plantation infrastructure, high attack of pest and business interruption of plantation commodities, and low institutional capacity of farmers in accessing technology, market information, capital, and partnership (Strategic Plan, Plantation Agency, East Java Province, 2014-2019). Coffee in East Java is one of the strategic and superior plantation products in supporting the export of Indonesia. Coffee is expected to be able to give a real contribution in national economy, such as: (1) employment and community income sources; (2) raw material of processing industry; (3) creating added value through postharvest, processing, and distribution activities; (4) non-oil and gas foreign exchange source through export activities in several destination countries and (5) creating markets for non-agricultural products (Dradjat et al., 2007).

The researches about coffee competitiveness in Indonesia have been conducted by some previous researchers. Purnamasari et al. (2014) used the measurement of Revealed Comparative Advantage (RCA), Comparative Export Performance (CEP) and Market Share Index (MSI). The result explains that Colombia, followed by Brazil and Vietnam have a comparative advantage compared to Indonesia. Indonesia is still ranked in the fourth place. Another finding is that 90% of Indonesian coffee products are Robusta coffee which has low quality, so it will have an impact on lower places compared to other countries. On the other hand, the research conducted by Murtiningrum (2013) found the result that Robusta coffee farming still has excellent competitiveness (competitive and comparative advantage) although there is a change of input and output with the assumption the other factors are remain (ceteris paribus). The condition in East Java about coffee competitiveness is examined by Prayuginingsih et al. (2012). The post-harvest processing of coffee uses two methods, which are wet and dry processing method. The research result shows that smallholder coffee farming in Jember Regency has high competitive and comparative competitiveness, indicated by the Private Cost Ratio (PCR) value of 0.3679 in wet processing and 0.4261 in dry processing, and also Domestic Resource Cost Ratio (DRCR) value of 0.5135 in wet processing and 0.4397 in dry processing. The research result from Muafi et al. (2016) recommended that there must be a harmonious combination of resources owned by an area and the ability to achieve competitive advantage. The resource itself can include tangible and intangible resources (Muafi, 2017; Ejrami et al., 2016; Todericiu & Stanit, 2015). Therefore, the purpose of this research is to analyse comparative and competitive knowledge of Robusta coffee in East Java. It is important so that the problems faced by farmers and government in East Java can be overcome properly so it will be useful to improve the performance of coffee industry in the future.

LITERATURE REVIEW

Competitiveness: Competitive Advantage and Comparative Advantage

Competitive advantage will be strongly related with external and internal factors. The approach of Porter's Diamond has been known to offer four criteria to measure the level of strength of competitiveness. This approach has been widely used to assess the feasibility or competitiveness of a country, region and/or industry (Porter, 1998). It also used to analyse the competitive advantage of an area, region or city (Windsberger, 2006; Allen & Potiowsky, 2008). The four factors are: (1) Condition, including the component of production factors such as human resources, capital, physical infrastructure, and information. If the quality of factor condition is higher, then the opportunity for industry to compete will be greater. (2) Demand, related the number and demand quality. If the demand is increasing and harder, then the community will be more capable and advance. (3) Related industry or supporters, which is giving added value because it can complement the main industry attributes and (4) Strategy, structure and competition, which means that the condition of an industry needs to be in the same alignment with the environment, strategies that must be taken and analysing how organization competitor is formed, managed and raised.

Allen & Potiowsky (2008) conducted research by offering a model to build a green area in Portland through the model of "*Porter's Diamond*" to support green areas. In order to apply a sustainable framework of green areas or "*environmentally friendly*" area, it is important to seek education, training, research and regional capacity development by involving the community, farmers, and local government. The area identification in supporting and growing sustainable green area development is carried out by realizing the potential to develop the economy and offer green building mapping. Green areas have the potential to accelerate sustainable resources for economic development (McCauley & Stephens, 2012), can also grow and develop clusters on an ongoing basis (Allen & Potiowsky, 2008). In Indonesia, Handayani et al. (2012) examined the competitiveness of a regional in general which is determined by the factors of a region's conditions, supporting industries, demand conditions, corporate strategies, and role of government, opportunities and social capital. Schalier et al. (2018) also found the result that agricultural activity is an important driver of competitiveness in many rural areas. External and internal environmental factors have similar importance. These two factors have a very important and strategic role in influencing the competitiveness. The research result from Lopez-Garcia et al. (2008) about coffee industry recommended that the technical standard for coffee industry and regulation enforcement are important in the effort to increase quality, safety and competitiveness of all actors. Shifting consumer demand and awareness will have an impact on consumer's willingness to pay higher prices for high quality products, so coffee certification contributes to smallholders, households and communities (Beuchelt & Zeller, 2012).

The approach of comparative advantage has been introduced by David Ricardo using some assumptions as follows: (1) There are two countries and two commodities; (2) Free trade; (3) There is perfect labour mobility in the country but there is no mobility between the two countries; (4) Constant production costs; (5) No transportation costs; (6) No technological changes and (7) Using the labour theory. Assumption number one to six are easily accepted, yet the assumption number seven is not valid and it should not be used to explain comparative advantage. Comparative advantage is a measure of potential competitiveness that is going to be achieved if the economy does not experience any distortion at all. Comparative advantage will be achieved if a country is capable to product more goods and services with lower cost compared to other countries (Martiningrum, 2013; Persaude, 2013). In the concept of comparative advantage, it is stated that a competitiveness of a country can be strengthened or weakened caused by the expansion of business areas, business efficiency, natural disasters, human resource capabilities and climate/weather (Darsono, 2009; Prasetyo et al., 2017). This research uses the model of Policy Analysis Matrix (PAM). According to Monke & Pearson (1995); Martiningrum, 2013, PAM model provides more complete understanding and consistent toward all policies influence and market failure on revenue, costs and profit in the production of agricultural sector production. In PAM model, the revenue, costs and profit is distinguished according to private prices (market) and social prices (Martiningrum, 2013; Mortazavi et al., 2014). The limitation of this model is the variable selection that is used must be done carefully since it includes several components that are sometimes difficult to be accessed because it includes secondary data. The access of primary data also requires the accuracy of the validity and reliability of the respondents (Monke & Pearson, 1995).

RESEARCH METHOD

The location of this research is determined purposively in 3 (three) Regency, which is Jember, Lumajang and Malang Regency with consideration that these three regencies have a vast Robusta coffee plantation area. The sampling technique used in this research is Quota Sampling, where the number of respondents of each regency is as many as 100 respondents, so the total number is 300 respondents. This respondent is used to confirm the secondary data that is used, which is about farming count. The competitiveness of Robusta coffee farming is measured through the analysis of comparative and competitive advantage using Policy Analysis Matrix (PAM). PAM consists of matrix compiled based on the financial (private) analysis and economic (social) analysis.

Acceptance and production costs at private and social prices is divided into tradable (foreign) and non-tradable (domestic) component. Tradable input consists of urea fertilizer and domestic factor comprising labour, start from plant maintenance to harvest, transportation costs, depreciation of equipment and land costs (land taxes and land leases). Non-tradable input consists of organic fertilizer, seeds and plastic for cover. In this research, data processing is done by using Microsoft Excel software. The determination of physical component for input and output factors is complete from economic activities, which start from farming to marketing. The data of the number of physical component for input and output factors is the average data of Robusta coffee farming.

PAM matrix measures three analyses, which are: private and social or economy profits, competitiveness analysis (comparative and competitive) and analysis of government's policy impact on commodities (Hidayah, 2018). Private Price is the price accepted by farmers after the interference from various parties including government policies. Social price is the price that should be accepted by farmers or the price on the perfect competition market (world price). Divergence is the difference between private prices and social prices (Soetriono, et al., 2010).

The private pricing of this research is the real price accepted by farmers and there is an intervention from government in it. The private price that is use is the average price of input-output that occurs in East Java during 2015. The private price of Robusta coffee in East Java is Rp20,929 per kilogram. As for the social price of Robusta coffee in this research is the export price of Robusta coffee (worldbank.org). The export price is then conversed with Shadow Exchange Rate (SER) and then added with transportation and commerce costs. Based on the calculation, the shadow price obtained in this research of Robusta coffee is at Rp.8,848.21 per kg. The divergence of revenue (output) of the commodity of Robusta coffee is 50.995.601-63.066.782=-12.066.782 per hectare. The divergence of input tradable transfer costs of Robusta coffee commodity is 6.122.937-7.804.919=-1.681.982 per hectare.

The analysis of domestic resources costs based on social price is used to detect comparative advantage in Robusta coffee farming in East Java. Comparative advantage of Robusta coffee farming on Table 1 is a PAM matrix that can be known from the Domestic Resources Cost Ratio (DRCR) coefficient. The criteria is that if the DRCR value is smaller than 1 (DRCR<1), this means that it has comparative advantage. The economic efficiency level in the comparative advantage of Robusta coffee commodities in East Java is shown by the DRCR value. If the DRCR value is<1it means that the production of Robusta coffee in East Java is efficient when viewed from the terms of domestic resource use and more profitable than importing. In the contrary, if the DRCR value is DRCR>1, this means that the production of Robusta coffee is inefficient when viewed from the terms of domestic resource use and there is a discomparative that occurs regionally.

The analysis of domestic resource costs based on private prices is used to detect competitive advantage in Robusta coffee farming. Competitive advantage is the actual measurement to measure the competitiveness in the prevailing market condition without questioning the existence of market distortion. Competitive advantage can be seen from the indicator of PCR value. Competitive advantage of Robusta coffee farming in East Java can be seen on Table 1. The PAM matrix can be known by the Private Cost Ratio (PCR) coefficient, if the PCR value is<1, this means that it has a competitive advantage. The analysis result of competitive advantage can be seen using PAM matrix. PAM analysis shows two values of competitive advantage. The first value shows the value of competitive advantage in farmers using domestic inputs and outputs. The second value shows the value of competitive advantage with the price of private import parity (Monke & Pearson, 1995; Martiningrum, 2013).

Table 1
PAM MEASUREMENT

Information	Acceptance	Cost		Profit
		Tradable Input	Non-Tradable Input	
Private Price	A	B	C	D
Social Price	E	F	G	H
Divergence	I	J	K	L
Source: Pearson et al., 2005				
Information				
Analysis of financial benefit: D=A-(B+C)				
Analysis of social benefit: H=E-(F+G)				
Analysis of financial efficiency: PCR=C/(A-B)				
Analysis of economic efficiency: DRCR=G/(E-F)				
Output transfer: OT=A-E				
Coefficient of nominal protection toward output: NPCO=A/E				
Input transfer: IT=B-F				
Coefficient of nominal protection toward input: NPCI=B/F				
Factor transfer: FT=C-G				
Coefficient of effective protection: EPC=(A-B)/(E-F)				
Transfer net: NT=D-H				
Profitability coefficient: PC=D/H				
Subsidy ratio for producers: SRP=L/E				

RESEARCH RESULT AND DISCUSSION

The calculation result using PAM matrix for Robusta coffee farming in East Java can be seen on Table 2.

Table 2
PAM MATRIX OF ROBUSTA COFFEE FARMING IN EAST JAVA

	Tradables		Total	Profits
	Output	Inputs	Domestic Factors	
Private	50 995 601	6 322 937	19 836 013	25 036 650
Social	63 062 383	7 804 919	20 938 177	34 319 288
Divergences	-12 066 782	-1 481 982	-1 102 162	-9 282 638
DRC=0.3789				
PCR=0.4421				

From the analysis result of comparative advantage using PAM based on Table 2, it can be seen that the DRC value of Robusta coffee commodities in East Java is 0.3789 (DRC<1). It indicates that Robusta coffee farming in East Java from the economic side is efficient in using domestic resources. This is because in order to obtain a foreign exchange for one unit, it is required domestic factor exchange for 0.6211 units. The low production of Robusta coffee is because some farmers are still not intensive enough in the coffee cultivation, such as improper fertilization time and pest and bug control that is less optimal. Besides, some Robusta coffee farmers have a too thick shade of plant. It is not possible to reduce since it belongs to conservation forest. There are also many coffee plants that are really old, so it is required to do plant rejuvenation with a high variety and productivity. It also affected by weather anomalies that occur at this time. These are the causes of market demand that cannot be fulfilled continuously according to the order.

The comparative advantage value of 0.3789 also affirms that Robusta coffee farming still has comparative advantage. It means that Robusta coffee farming is still profitable and worth the effort. Another prove of Robusta coffee is still profitable is indicated from higher value of profit compared to zero (positive), in which the profit is obtained from the difference between social revenue and domestic factor cost. The revenue and cost for comparative advantage analysis is calculated based on social prices. The value of social profit of Robusta coffee is Rp.34,319,288. According to Olagunju (2015), higher social price reflects imperfect market in terms of the inputs that is used. If this occurs, it means that there are an action of quality control and resource utilization that are not maximal.

Barbin et al. (2014) stated that in developing the system of quality evaluation based on the information of infrared spectral can be used to assess the parameters of coffee quality and bring economic benefit for coffee industry by increasing consumer's belief of product quality. Aduoyemi & Omi (2014) have found the result in Nigeria that based on the ratio of domestic resource costs, the result obtained is 0, 16-0, 19 and based on the ratio of social costs, the result obtained is 0, 20-0, 23which means that the Southwest of Nigeria has a comparative advantage of banana commodity. Nayantakaningtyas & Daryanto (2012) also found the result that the palm oil industry in Indonesia also has a comparative advantage. It is showed from the calculation of RCA value that generates the number that is more than one.

The calculation of comparative advantage in Table 2 also shows two cost structures that is used in Robusta coffee farming, which are input tradable cost and domestic factor cost. The working capital that is used is 14.79 percent where the data is the average of rupiah lending rate according to the sum of bank interest rates plus the percentage rate of inflation in 2015. The revenue and costs in the level of social price (symbol E, F and G) are based on the estimation of social opportunity cost from the commodity produced and input that is used. The estimation of this social price is then multiply with the number of output or input that is used, in which the input or output is also used in the cost calculation or private profit. Almost all of the data that are used to count the comparative advantage is obtained from outside the farmers. Robusta coffee farming in East Java has a comparative advantage with the value of Shadow Exchange Rate (SER) of Rp.13,389.51. In this research, the price of rupiah exchange rate that is used is the rupiah exchange rate against the dollar in 2015 (Ministry of Finance of the Republic of Indonesia), which is the average exchange rate of the Bank of Indonesia of Rp.13,389.41 per US dollar. Shadow Exchange Rate (SER) is the shadow price of rupiah exchange rate that is calculated by dividing between the average exchange rate of Rp.13,389.51 per US dollar with Standard Conversion Factor (SCF) is the amount of product that can be generate from one raw material unit of 0.993.

The result of production and internationally traded revenue are based on the world market prices. The price of Robusta coffee in the world market in 2015 (http://pubdocs.worldbank.org/en/732571470253390411/CMO-Pink-Sheet-August-2016.pdf) is 1.94 US dollar per kg. The social price of Robusta coffee that is accepted by farmers is Rp.25,881.1 per kg. Emelda et al. (2014) stated that the policy of Indonesian government has support the development and improvement of comparative and competitive advantage of cacao farmers with the DRC value of 0.03 and PCR of 0.04 in North Luwu.

The value of Private Cost Ratio (PCR) shows a competitive advantage, where PCR is the ratio between domestic factor cost and added value of output from the domestic factor cost which is traded at the price at farmer level. The analysis result that shows the competitive advantage value is showed on Table 2 with the number of 0.421. The calculation result for the coefficient of financial cost (private) is obtained smaller than 1, which is 0.4421. This result proves that Robusta coffee farming has a competitive advantage. The competitive advantage value is 0.4421, which means in order to produce one-unit value-added output at private price, it is only requires the sacrifice of domestic resource of 55.79 percent in East Java. This PCR value shows that the amount of cost that requires to be sacrificed because of the use of resources in the market price has a lower value than the profit accepted by producers for every one unit of currency (rupiah). The smaller the PCR value, then the Robusta coffee farming will be more efficient privately and has a greater competitive advantage. Akhtar et al. (2016) stated that the PAM model shows that the production of tomato in two regions in Punjab have a competitiveness in the market situation currently, as shown from the positive private profit and the PCR value that is less than 1 (< 1).

Donovan & Poole (2014) added that the process of institution participation, intervention, related with certified coffee market cannot reach a wider result if it is only about accessing profitable price, build a sustainable value chain, and more competitive. Ernesto Me´ndez, et al. (2010) even found a research result that the fair trade of organic coffee is proven effective in supporting capacity increase as a network that utilize global development funds to produce coffee on a small scale. It is recommended by Bacon et al. (2014) that a product-oriented strategy should be through diversification and intensification of agriculture while an exchange-oriented strategy can include storage, prices, redistribution, and credit.

It can be concluded that Robusta coffee farming in East Java can still be run. This is showed by the profit financial value that is bigger than zero (positive value), where the profit is obtained from the difference between private revenue and private costs. Private revenue and cost for the analysis of competitive advantage is calculated based on the actual price received and paid by the farmers. The private profit of Robusta coffee in East Java is positive, which is about Rp.25,036,650, 00 per hectare. The calculation result of competitive advantage in Table 2 also shows two cost structures that are used in Robusta coffee farming, which is input tradable cost and domestic factor cost. The domestic factor is the total cost incurred by Robusta coffee farmers, consisting of labour costs, non-tradable inputs, and working capital. Most of the labour used by Robusta coffee farmers comes from outside the family. Robusta coffee farmers generally used their own capital in the cultivation of coffee plants. Yao Wen (2015) stated that in order to create international and domestic environment that is good for agricultural development and the improvement of international competitiveness of its agricultural product, Chinese government provides a full role to increase demand in the domestic agricultural country. Najarzadeh et al. (2011) also added that the index value of competitiveness based on export prices is expected to be 0.33, so that the saffron farmers in Iran can compete in the world market.

CONCLUSION

Robusta coffee has comparative and competitive advantage. It means that Robusta coffee farming in East Java is still profitable and feasible to be run and developed and it also has efficiency. The theory implication is the Policy Analysis Matrix (PAM) can be used as the indicator of comparative advantage and Private Cost Ratio (PCR) as the indicator of competitive advantage. Practically, Robusta coffee farmers need to have the right competitive strategy in order to continue to improve their performance and be more competitive. The right competitive strategy is done by analysing the comparative and competitive advantage of the coffee business accurately by considering the internal and external environment faced by the coffee business, so that it can be used to improve business performance.

LIMITATION AND FUTURE RESEARCH ORIENTATION

The limitation of this research and the future research orientation are as follows:

1. Respondents that are involved in the data confirmation about farming count are influenced by the situation and condition that occur at that time, so it is feared that there will be a bias. Therefore it is required validation with other stakeholders such as government, consumers and supplier.
2. This research only include three regencies in East Java, Indonesia, therefore it still cannot generalized the situation and condition of coffee farming in Indonesia. Future research should consider other regencies outside East Java Province that conduct similar coffee farming on the improvement of comparative and competitive advantage in Indonesia.

3. Future research should also do a segmentation of coffee farmers who have exporting their coffee and who have not, so that in the future it can be used to assess the business performance of coffee farmers that are more directed to the improvement of export competitiveness in order to catch the wider opportunity of world market.

REFERENCES

Adeoye, I.B., & Oni, O.A. (2014). Competitiveness and effects of policies on plantain production systems in Southwestern Nigeria. *Agris On-Line Papers in Economics & Informatics, 6*(4).

Akhtar, W., Sharif, M., Qureshi, A.H., Aujla, K.M., & Khan, M.A. (2016). Competitiveness of tomato production in Punjab, Pakistan. *Pakistan Journal of Agricultural Research, 29*(2).

Allen, J.H., & Potiowsky, T. (2008). Portland's green building cluster: Economic trends and impacts. *Economic Development Quarterly, 22*(4), 303-315.

Bacon, C.M., Sundstrom, W.A., Gómez, M.E.F., Méndez, V.E., Santos, R., Goldoftas, B., & Dougherty, I. (2014). Explaining the 'hungry farmer paradox': Smallholders and fair trade cooperatives navigate seasonality and change in Nicaragua's corn and coffee markets. *Global Environmental Change, 25*, 133-149.

Barbin, D.F., Felicio, A.L.D.S.M., Sun, D.W., Nixdorf, S.L., & Hirooka, E.Y. (2014). Application of infrared spectral techniques on quality and compositional attributes of coffee: An overview. *Food Research International, 61*, 23-32.

Beuchelt, T.D., & Zeller, M. (2013). The role of cooperative business models for the success of smallholder coffee certification in Nicaragua: A comparison of conventional, organic and Organic-Fairtrade certified cooperatives. *Renewable Agriculture and Food Systems, 28*(3), 195-211.

Darsono. (2008). *The role of the government in the development of agriculture and agro-industry in Indonesia*. Surakarta (ID): LPP UNS, UNS Press and Pusbinkeshangsda LPPM UNS.

Donovan, J., & Poole, N. (2014). Changing asset endowments and smallholder participation in higher value markets: Evidence from certified coffee producers in Nicaragua. *Food Policy, 44*, 1-13.

Dradjat, B., Agustian, A., & Supriatna, A. (2007). Export and competitiveness of Indonesian coffee farms on the international market: Strategic implications for the development of organic arabica coffee. *Journal of Coffee and Cocoa Research, 24*(2), 139-159.

Ejrami, M., Salehi, N., & Ahmadian, S. (2016). The effect of marketing capabilities on competitive advantage and performance with moderating role of risk management in importation companies. *Procedia Economics and Finance, 36*, 22-28.

Emalda, A., Awal, I., & Mappigau, P. (2014). An analysis of competitiveness and government policies impact on development of cocoa farming in Indonesia. *Asian Journal of Agriculture and Rural Development, 4*(1), 30-35.

Ernesto Méndez, V., Bacon, C.M., Olson, M., Petchers, S., Herrador, D., Carranza, C., Trujillo, L., Guadarrama-Zugasti, C., Cordón, A., & Mendoza, A. (2010). Effects of fair trade and organic certifications on small-scale coffee farmer households in central America and Mexico. *Renewable Agriculture and Food Systems, 25*(3), 236-251.

Handayani, W.U., Santoso, H., & Pratama, A.I. (2013). Factors affecting the competitiveness of furniture clusters in Jepara regency. *Industrial Engineering Journal, 13*(1), 22-30.

Hidayah, H. (2018). *Analysis of the competitiveness of cocoa and coffee commodities in the province of South Sulawesi.* The Agribusiness study program of the Department of Agricultural Social Economics, Faculty of Agriculture. Thesis, Hasanuddin University, Makassar.

Lopez-Garcia, R., Mallmann, C.A., & Pineiro, M. (2008). Design and implementation of an integrated management system for ochratoxin A in the coffee production chain. *Food Additives and Contaminants, 25*(2), 231-240.

McCauley, S.M., & Stephens, J.C. (2012). Green energy clusters and socio-technical transitions: analysis of a sustainable energy cluster for regional economic development in Central Massachusetts, USA. *Sustainability Science, 7*(2), 213-225.

Monke, E.A., & Pearson, S.R. (1995). *The policy analysis matrix for agricultural development.* Cornell University Press. Ithaca and London.

Mortazavi, S.A., Eshghi, F., & Darbandi, E. (2014). A study of relation between comparative advantage policies of wheat and support policies by using econometrics approach. *European Online Journal of Natural and Social Sciences, 3*(1), 11-19.

Muafi., Sudiwati, C., & Suparyono, W. (2016). Competitiveness improvement of green area: The case of OVOP in Bantul region, Daerah Istimewa Yogyakarta (DIY) province, Indonesia. *International Business Management, 10*(1), 24-31.

Muali. (2017). Is there a relationship pattern between small medium enterprise strategies with performance in technology business incubation? *International Journal of Public Sector Performance Management, 3*(1), 18-39.

Mustikaningrum, I. (2013). *Analysis of competitiveness of robusta coffee farmers (Coffea Canephora) in Rejang Lebong regency*. Postgraduate Program in Agribusiness Masters Thesis, Faculty of Agriculture, University of Bengkulu.

Najarzadeh, R., Reed, M., Saghaian, S., Aghaei, M. & Rezagholizadeh, M. (2011). A study of Iran's comparative costs in Saffron. *Journal of International Agricultural Trade and Development, 7*(1), 11-19.

Nayantakaningtyas, J.S., & Daryanto, H.K. (2012). Competitiveness and strategy of palm oil development in Indonesia. *Journal of Management and Agribusiness, 9*, 194-201.

Olagunju, F.I. (2015). Comparative advantage and competitiveness of cashew crop in Nigeria: The policy analysis matrix. *International Journal of Agriculture and Economic Development, 3*(1), 1-14.

Pernade, B. (2013). *Reconstruction of Indonesian social sciences in the development of social institutions and social capital towards Indonesia's civilized, just and prosperous future*. National Seminar, Surakarta.

Porter, M.E. (1998). *The competitive advantage of nations: With a new introduction*. London: MacMillan.

Prasetyo, A., Marwanti, S., & Darsono. (2017). Comparative advantage and export performance of Indonesian crude palm oil in international markets. *Jurnal Agro Ekonomi, 35*(2), 89-103.

Prayogaingsih, H., Santosa, T.H., Hasmi, M., & Rizal, N.S. (2012). Increasing the competitiveness of people's coffee in the district of Jember. *JSEP, 6*(3), 26-40.

Purnamasari, M., Hanani, N., & Huang, WC (2014). Analysis of Indonesian coffee export competitiveness in the world market. *Agricultural Socio-Economics Journal, 14*(1), 58.

Ranjith, V.K. (2016). Business models and competitive advantage. *Procedia Economics and Finance, 37*, 203-207.

Strategic Plan, Plantation Agency, East Java Province. (2014-2019). Retrieved from http://www.disbun.jatimprov.go.id/RENSTRA2014-2019.pdf

Schaller, L., Targetti, S., Villanueva, A.J., Zasada, I., Kantelhardt, J., Arriaza, M., Bal, T., Fedrigotti, V.B., Handan Giray, F., Häfner, K., Majewski, E., Malak-Rawlikowska, A., Nikolov, D., Christophe Paoli, J., Piorr, A., Rodríguez-Entrena, M., Ungaro, F., Verburg, P.H., van Zanten, B., & Viaggi, D. (2018). Agricultural landscapes, ecosystem services and regional competitiveness—Assessing drivers and mechanisms in nine European case study areas. *Land Use Policy, 76*, 735-745.

Soetriono, F., Maria, A., & Hidayat, D.R. (2010). *Robusta coffee agribusiness competitiveness (An Economic Perspective)*. Surya Pena Gemilang Publisher, Malang.

Todericiu, R., & Stăniţ, A. (2015). Intellectual capital: The key for sustainable competitive advantage for the SME's sector. *Procedia Economics and Finance, 27*, 676-681.

Windsberger, A. (2006). Resource-based view of competitive advantage of cities. *SEE Journal of Economics and Business, 2*, 20-31.

YueWen. (2015). Impact of agricultural modernization, economic growth and industrialization on the international competitiveness of agricultural products: Based on the empirical analysis of cointegration and VEC model. *Asian Agricultural Research, 7*, 18-24.

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